



**DEPARTMENT OF HEALTH**  
**DIRECTORATE: RADIATION CONTROL**



**GUIDELINES**

**DENTAL RADIOGRAPHY**

**A. RADIATION WORKERS**

1. Dental radiation examinations may only be performed by registered:
  - dentists,
  - radiographers,
  - dental therapists, and
  - oral hygienists
2. Operators of dental units are conditionally exempted from personal monitoring (wearing of TLD's – Thermo Luminescent Dosimeters).
3. Monitoring of workers
- 3.1 Under the following circumstances, operators are required to wear a personal dosimeter (TLD) when:
  - (i) the position of the worker during exposures is less than 2 metres
  - (ii) the weekly workload exceeds:
    - 100 intra-oral or
    - 50 pan/ceph exposures or
    - pro-rata combination of each type of examination (table 1)

Table 1

Examination	Exposures					
	100	80	60	40	20	0
Intra-oral and	100	80	60	40	20	0
Pan/ceph	0	10	20	30	40	50

- 3.2 The licence holder is responsible to determine whether TLD's must be issued to the persons performing dental examinations.
- 3.3 The licence holder must keep a register of the monthly reports furnished by the SABS for such radiation workers. This register must be kept for 10 years from the last date of entry.

## B. DENTAL X-RAY UNITS

1. An appropriate exposure technique chart (manual and automatic exposures) must be displayed near the control panel of the x-ray unit(s).
2. The exposure chart(s) must be established after optimising the film- / image processing procedure so as to keep the dose to the patient to the lowest practical value, consistent with the clinical objectives.
3. Units below 50kv will not be licensed. If an x-ray unit is found to be operating below 50kV, the unit will be sealed and not relicensed for use.
4. Point type dental cones are no longer allowed and units using point type cones will not be relicensed.  
Cones must conform to the following:  
**Circular:**  $\leq 60\text{mm}$  diameter at the open end of the collimator and it must be of the open ended type OR  
**Rectangular**  $\leq 40 \times 50\text{mm}$  at the open end of the collimator.  
Focus to skin distance of at least 200mm
5. Second hand dental units that have not previously been licensed by the Directorate: Radiation Control, will not be licensed for use.
- 6 The licence holder must ensure that all the applicable requirements are implemented as stipulated in *REQUIREMENTS FOR LICENCE HOLDERS WITH RESPECT TO QUALITY CONTROL TESTS FOR DENTAL DIAGNOSTIC X-RAY IMAGING SYSTEMS* (Latest edition)), available at  
**<https://sites.google.com/site/radiationcontroldoh/> → Electronic devices - Use → Electronic devices – Ionising Radiation → Licence Conditions**
- 6.1 The licence holder shall ensure that only an Inspection Body (IB) approved by the Department of Health is used to perform all the acceptance tests as well as the routine tests. A list of approved Inspection Bodies is available at  
**<https://sites.google.com/site/radiationcontroldoh/> → Electronic devices - Use → Electronic devices – Ionising Radiation → Inspection bodies** and is regularly updated.

## C. IMAGE QUALITY

For the EVALUATION of the TOTAL IMAGE CHAIN the following MUST BE AVAILABLE:

**Film & digital- Intra- oral** –Uni DENT PHANTOM or similar .

**Film** – Intra-oral, Panoramic & Cephalometric radiography – TOR DEN conventional phantom  
or similar

**Digital** - Intra-oral, Panoramic & Cephalometric radiography – TOR DEN conventional phantom or similar

**D. PATIENT PROTECTION**

1. The compulsory use of protection devices such as lead rubber aprons and thyroid shields for protection of patients during dental examinations is no longer a requirement.
2. Adequate precaution should, however, be taken to reduce radiation when examinations are performed on women of childbearing capacity and children.

**E. PATIENT RECORDS**

1. A record / register must be kept of all patients undergoing x-ray examinations. The record / register must be preserved for 5 years containing the following information:
  - surname, name, date of birth/age and sex
  - date of examination
  - brief clinical indication of the examination
  - type of examination
  - number of exposures (repeat exposures included)
  - fluoroscopy time (if applicable)
  - brief statement of the diagnostic information obtained from the examination

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